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Ruth Montalvo
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25 April 02
Date

Docket No.:GK-ZEI-3147/500343.20148

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Mario GERLACH, Martin WIECHMANN, Olaf KITTELMANN,
Diegeo ZIMARE, Michael KEMPE, Dirk MUEHLHOFF, and
Alexander KALIES

Serial No.: 10/043,465

Filed: January 10, 2002

For: MEDICAL LASER THERAPY DEVICE

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to receipt of a first Office Action, please amend the above-identified application as follows:

IN THE SPECIFICATION

Cancel the present specification and substitute therefor the enclosed substitute specification.

IN THE CLAIMS

Page 13, change "Patent Claim" to --What is claimed is--.

Cancel claims 1-26 and add new claims 27-52, reading as follows:

--27. (new)) A medical laser therapy device comprising:
a controllable pump module with a coupling element for a waveguide;
a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and
an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;
said pump module having laser diodes whose electromagnetic pumping radiation is in the spectral range from 800 nm to 815 nm;
an optics module being provided which couples the pumping radiation into the waveguide;
said beam control device being an Nd-doped waveguide laser with a double core or single core and a suitable reflecting coating of the fiber end faces;
said waveguide forming a laser cavity with radiation in a frequency range between 1050 nm and 1070 nm;
said applicator being a laser slit lamp with zoom system having a device for frequency doubling which comprises nonlinear optical material or periodically poled nonlinear optical material;
said applicator having a device for power monitoring;
said applicator having a device for illuminating and observing the operating field; and
said applicator also having a target beam device whose radiation is coupled collinearly into the beam path for the therapy radiation by a suitable beamsplitter.

28. (new). The laser therapy device according to claim 27, wherein the applicator is constructed as a head ophthalmoscope with a device for frequency doubling comprising a nonlinear optical material or periodically poled nonlinear optical material.

29. (new) The laser therapy device according to claim 27, wherein the applicator is a laser link with a zoom system and has a device for frequency doubling which

is made from nonlinear optical material or periodically poled nonlinear material, wherein this device is an internal or external part of the laser cavity.

30. (new) A laser therapy device comprising:
a controllable pump module with a coupling element for a waveguide;
a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and
an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;
said pump module having laser diodes whose electromagnetic pumping radiation is in the spectral range from 800 nm to 815 nm; and
an optics module being provided which couples the pumping radiation into the waveguide;
said pump module having a target beam device whose radiation is coupled into the beam path for the therapy radiation collinearly by a suitable beamsplitter;
said beam control device being an Nd-doped waveguide laser with a double core or single core and suitable reflecting coating of the fiber end faces, wherein the waveguide forms a laser cavity with radiation in a frequency range between 1050 nm and 1070 nm;
said applicator being a laser slit lamp with a zoom system which has a device for frequency doubling comprising nonlinear optical material or periodically poled nonlinear optical material; and
said applicator having a device for power monitoring; and
said applicator also having a device for illuminating and observing the operating field.

31. (new) The laser therapy device according to claim 30, wherein the applicator is a head ophthalmoscope which has a device for frequency doubling preferably comprising nonlinear optical material which can also be periodically poled, wherein this device is an internal or external part of the laser cavity.

32. (new) The laser therapy device according to claim 30, wherein the applicator is a laser link which has a zoom system and a device for frequency doubling

preferably comprising nonlinear optical material which can also be periodically poled, wherein this device can be an internal or external part of the laser cavity.

33. (new) A laser therapy device for medical applications comprising:
a controllable pump module with a coupling element for a waveguide;
a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and
an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;
said pump module comprising laser diodes whose electromagnetic pumping radiation is in the spectral range from 830 nm to 850 nm;
an optics module being provided which couples the pumping radiation of the laser diodes into the waveguide;
said beam control device being constructed as a Pr/Yb-doped waveguide with suitable reflecting coating of the fiber end faces, so that the waveguide forms a laser cavity for radiation in the frequency range between 520 nm and 540 nm or between 630 nm and 640 nm, depending on its technical design;
said applicator being a laser slit lamp with a zoom system and comprising a device for monitoring power and a device for illuminating and observing the operating field;
and
said applicator having a target beam device whose radiation is coupled into the beam path for the therapy radiation collinearly by a beamsplitter.

34. (new) The laser therapy device according to claim 33, wherein the applicator is a head ophthalmoscope.

35. (new) The laser therapy device according to claim 33, wherein the applicator is a laser link with a zoom system.

36. (new) A laser therapy device comprising:
a controllable pump module with a coupling element for a waveguide, a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and

an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;

said pump module comprising laser diodes whose electromagnetic pumping radiation is in the spectral range from 830 nm to 850 nm;

an optics module being provided which couples the radiation of the laser diodes into the waveguide;

said beam control device being constructed as a Pr/Yb-doped waveguide with suitable reflecting coating of the fiber end faces, so that the waveguide forms a laser cavity for radiation in the frequency range between 520 nm and 540 nm or between 630 nm and 640 nm, depending on its technical design;

said applicator being a laser slit lamp with a zoom system;

said applicator comprising a device for monitoring power and a device for illuminating and observing the operating field; and

said pump module comprising a target beam device whose radiation is coupled into the beam path for the pumping radiation collinearly by a beamsplitter.

37. (new) The laser therapy device according to claim 36, wherein the applicator is a head ophthalmoscope.

38. (new) The laser therapy device according to claim 36, wherein the applicator is a laser link with zoom system.

39. (new) A laser therapy device for medical applications comprising:
a controllable pump module with a coupling element for a waveguide;
a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and

an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;

said pump module comprising laser diodes whose electromagnetic pumping radiation is in the spectral range from 970 nm to 980 nm;

an optics module being provided which couples the pumping radiation of the laser diodes into the fiber;

said beam control device being constructed as an Er-doped waveguide with suitable reflecting coating of the waveguide end faces, so that the waveguide forms a laser cavity for radiation in the frequency range between 540 nm and 550 nm;

said applicator being a laser slit lamp with a zoom system;

said applicator comprising a device for monitoring power;

said applicator comprising a device for illuminating and observing the operating field; and

said applicator comprising a target beam device whose radiation is coupled into the beam path for the therapy radiation collinearly by a beamsplitter.

40. (new) The laser therapy device according to claim 39, wherein the applicator is a head ophthalmoscope.

41. (new) The laser therapy device according to claim 39, wherein the applicator is a laser link with zoom system.

42. (new) A laser therapy device comprising:

a controllable pump module with a coupling element for a waveguide;

a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and

an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;

said pump module comprising laser diodes whose electromagnetic pumping radiation is in the spectral range from 970 nm to 980 nm; and

an optics module being provided which couples the pumping radiation of the laser diodes into the fiber;

said beam control device being constructed as an Er-doped waveguide with suitable reflecting coating of the waveguide end faces, so that the waveguide forms a laser cavity for radiation in the frequency range between 540 nm and 550 nm;

said applicator being a laser slit lamp with a zoom system;

said applicator comprising a device for monitoring power;

said applicator having a device for illuminating and observing the operating field; and

said pump module comprising a target beam device whose radiation is coupled into the beam path for the pumping radiation collinearly by a suitable beamsplitter.

43. (new) The laser therapy device according to claim 42, wherein the applicator is a head ophthalmoscope.

44. (new) The laser therapy device according to claim 42, wherein the applicator is a laser link with zoom system.

45. (new) The laser therapy device for medical applications comprising:
a controllable pump module with a coupling element for a waveguide;
a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and

an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;

said pump module having laser diodes whose electromagnetic pumping radiation is in the spectral range from 800 nm to 815 nm; and

an optics module being provided which couples the pumping radiation into the waveguide, in that the beam control device is a non-doped waveguide, possibly with antireflection-coated end faces, so that the pumping radiation is supplied to the applicator;

said applicator being a laser slit lamp with zoom system which comprises a microchip laser for converting the pumping radiation into radiation in the green spectral range;

said applicator having a device for monitoring power and a device for illuminating and observing the operating field; and

said applicator having a target beam device whose radiation is coupled into the beam path for the therapy radiation collinearly by a beamsplitter.

46. (new) The laser therapy device according to claim 45, wherein the applicator is a head ophthalmoscope which comprises a microchip laser for converting the pumping radiation into radiation in the green spectral range.

47. (new) The laser therapy device according to claim 45, wherein the applicator is a laser link with a zoom system and with a microchip laser for converting the pumping radiation into radiation in the green spectral range.

48. (new) A laser therapy device comprising:
a controllable pump module with a coupling element for a waveguide;
a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator; and
an applicator with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated;
said pump module comprising laser diodes whose electromagnetic pumping radiation is in the spectral range from 800 nm to 815 nm; and
an optics module being provided which couples the pumping radiation into the waveguide;
said beam control device being a non-doped waveguide, possibly with antireflection-coated end faces, so that the pumping radiation is supplied to the applicator;
said applicator being a laser slit lamp with zoom system which comprises a microchip laser for converting the pumping radiation into radiation in the green spectral range;
said applicator having a device for monitoring power and a device for illuminating and observing the operating field;
said pump module having a target beam device whose radiation is coupled into the beam path for the pumping radiation collinearly by a suitable beamsplitter;
said applicator being a laser slit lamp with zoom system which comprises a microchip laser for converting the pumping radiation into radiation in the green spectral range.

49. (new) The laser therapy device according to claim 48, wherein the applicator is a head ophthalmoscope which comprises a microchip laser for converting the pumping radiation into radiation in the green spectral range.

50. (new) The laser therapy device according to claim 48, wherein the applicator is a laser link with zoom system which comprises a microchip laser for converting the pumping radiation into radiation in the green spectral range.

51. (new) The laser therapy device according to claim 48, wherein the pump module optionally comprises a measuring device for calibrating internal power regulation.

52. (new). The laser therapy device according to claim 48, wherein the applicator is constructed as a handpiece for endoscopic or CPC applications.

IN THE ABSTRACT OF THE DISCLOSURE

Please add the enclosed Abstract of the Disclosure.

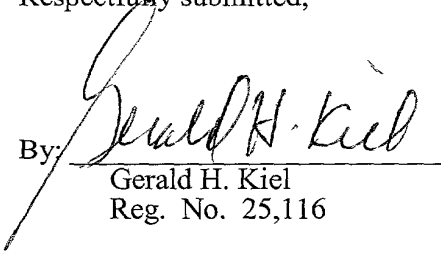
REMARKS

The specification has been amended to conform it to U.S. format and a new Abstract of the Disclosure has been added. Claims 1-26 have been cancelled and new claims 27-52 been added.

An early and favorable action on the merits is respectfully requested.

Respectfully submitted,

By


Gerald H. Kiel
Reg. No. 25,116

April 25, 2002
REED SMITH LLP
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GHK:jl
Enc.: Substitute Specification
Abstract of the Disclosure
Preliminary Amendment